

Perspectra Metallics™ is a visually stunning coil coating system custom formulated for architectural and commercial building components.

1.0 Scope

- 1.1 The following specification shall apply to hot dipped metallic coated sheet steels prefinished with "metallic look" colours of proven durability and suitable for exterior exposure as delivered from the coil coater.

Perspectra Metallics™ is a paint system using the most durable polyurethane resins, cool metallic pigment technologies and proven pre-treatments. It is designed for sidewall (vertical) applications and roofing (non-vertical) applications for the construction and manufacturing industry. Applications are limited to normal environments. It is not recommended for aggressive atmospheric exposures.

2.0 Base Metal

The base metal furnished before painting shall conform to one of the following specifications:

- (a) Zinc coated (galvanized) sheet steel conforming to the requirements of ASTM A653 or A653M as applicable.
- (b) 55% aluminum-zinc (Galvalume™) alloy coated steel sheet conforming to the requirements of ASTM A792 or A792M as applicable.

3.0 Chemical Pretreatment

- 3.1 Microcrystalline zinc phosphate chemical pretreatment shall be applied to the hot dip galvanized base metal prior to primer application.
- 3.2 Metal oxide conversion coating shall be applied to the 55% aluminum-zinc (Galvalume™) base metal prior to primer application.

4.0 Paint Qualification Tests

4.1 Film Thickness

The exposed surface shall have a dry film thickness of $25\mu\text{m} \pm 5\mu\text{m}$ (0.95 ± 0.2 mils) and may vary with the colour. The

unexposed or reverse side shall have a dry film thickness which will vary in accordance with the customer's requirements.

Test Method: ASTM D5796

4.2 Film Hardness (Pencil Method)

The hardness of the paint film may be measured by means of Eagle/Berol turquoise T-2375 or equivalent pencils using a flat cylindrical head applied at a 45° angle to the paint film. A minimum hardness of HB shall be obtained. Pencil Hardness is specified as the hardest pencil number that will not rupture the paint film when tested as described above.

Test Method: ASTM D3363

4.3 Formability/Adhesion Test

When testing a representative sample at $20^\circ\text{C} \pm 1^\circ\text{C}$ and using #610 Scotch cellophane tape, the paint system will show no loss of adhesion when subjected to a 1T 180° bend and tape pull test.

Test Method: ASTM D4145

This requirement does not apply to material ordered to ASTM A653M/A792M Grade 550 or ASTM A653/A792 Grade 80.

4.4 Colour/Gloss

The specular gloss shall be 30 ± 5 gloss units when measured with a Gardner 60° Glossmeter. Because of its metallic pigments, only the standard gloss can be ordered.

Test Method: ASTM D523

4.5 Salt Spray Resistance

After 1000 hours of exposure to continuous salt spray 55 wt % of sodium chloride, the surface shall show a minimum rating of #8 as per ASTM D714 and less than 3mm creep from the scribe line.

Test Method: ASTM B117

4.6 Humidity Resistance

The humidity resistance test shall be conducted at 100% relative humidity at a temperature of 38°C (100°F). After 1000 hours of exposure, the surface shall show no field blisters as per ASTM D714.

Test Method: ASTM D2247

5.0 Interior Exposure (Weathering)

Each proven colour of Perspectra Metallics™ will meet the following weathering standards for applications within Canada and the Continental United States (in the absence of aggressive fumes and/or other chemicals not normally encountered in the atmosphere).

5.1 Film Integrity

During the first forty (40) years of exposure, the paint film shall have no evidence of cracking, flaking, or checking to an extent that is apparent on ordinary outdoor visual observations.

5.2 Chalking

For the first thirty (30) years, vertical installations will not chalk more than a #8 rating and non-vertical installations will not chalk more than #6 when measured per ASTM D4214, Method A.

5.3 Colour Change

For the first thirty (30) years, vertical installations will not change colour more than seven (7) delta E colour units and non-vertical installations will not change more than nine (9) delta E colour units. Colour measurements are to be made per ASTM D2244 and only on clean surfaces after removing surface deposits and chalk per ASTM D3964. Colour change shall be measured on any accepted colourimeter designed to produce reflectance readings in the Tristimulus Filter System of X, Y and Z based on the CIE values of illuminant C at 2° and measured in Hunter L, a, and b units.

6.0 Product Attributes

Perspectra Metallics™ is available in five standard popular colours and customizable in various non-standard colour options.

The standard colour names and solar reflectance properties are provided in Table 1.

Table 1: Perspectra Metallics™ Colours

QC10400	QC10320	QC10319	QC10322	QC10321
Silver	Bright Silver	Pewter	Graphite	Copper
HDG: TSR = 0.61, SRI = 65	HDG: TSR = 0.54, SRI = 55	HDG: TSR = 0.33, SRI = 27	HDG: TSR = 0.18, SRI = 9	HDG: TSR = 0.35, SRI = 37
GLVM: TSR = 0.62, SRI = 67	GLVM: TSR = 0.54, SRI = 55	GLVM: TSR = 0.33, SRI = 27	GLVM: TSR = 0.18, SRI = 10	GLVM: TSR = 0.44, SRI = 49

Total Solar Reflectance (TSR) and Solar Reflectance Index (SRI)
Galvalume™ (GLVM) and Hot Dip Galvanized steel (HDG)

Due to the nature of metallic pigments, this product is directional and requires the application of directional chevrons on the reverse side. It is impossible for each lot of prefinished steel to be an identical colour match. For this reason, the following procedures are highly recommended:

- Ensure that each building is clad with material from the same production lot.
- Orders for large projects which could involve more than one production order must be discussed with your ArcelorMittal sales representative.